

ExPhys 2003

Powers and Howley

Ch. 4 -- Exercise Metabolism -- Study Questions

1. Be able to draw a graph that shows what the O_2 deficit is. What does an O_2 deficit reveal about energy sources? For a constant level of exercise, is reliance on aerobic metabolism constant during the O_2 deficit? Explain. List all energy sources during the O_2 deficit.
2. What is the EPOC? How would you know that you were in an EPOC period? Explain the difference between O_2 debt and EPOC. What are the causes of the so-called "rapid" and "slow" components of the EPOC (i.e. O_2 debt)?
3. For a constant level of exercise in the same person but performed in a cool dry environment vs. a warm humid one -- what should be the differences in the EPOC? Why?
4. What is $\dot{V}O_{2\max}$? How would one measure it? Make a graph showing it.
5. Explain the concept of the anaerobic (lactate) threshold (OBLA). What factors determine the exact value of the lactate threshold. What practical value is there to knowing the lactate threshold?
6. What does the respiratory exchange ration (R) tell an exercise physiologist?
7. What is the relationship between the fuel used in exercise and its intensity? Would the same absolute power output (lets say 500 w) mean that the same fuel is being used in different subjects? Explain. What level of exercise is best to reduce body fat - low, intermediate or high? Explain.
8. What does it mean to say that fats burn in a carbohydrate flame?
9. What is the relationship between diet, carbohydrate stores, and performance (you'll need to think about this one) in light, medium and heavy exercise and in exercise of different duration?

The end of the chapter questions and the study questions (disk) are quite good; I would suggest looking them over carefully and answering them.